FCC TEST REPORT

Client Name	:	Xwireless LLC
Address	:	11565 Old Georgetown Road, Rockville, MD, USA
Product Name	:	SMARTPHONE
Date	:	Jan. 14, 2022

Shenzhen Anbotek Compliance Laboratory Limited

Contents

TEST REPORT

Applicant	:	Xwireless LLC
Manufacturer	:	Xwireless LLC
Product Name	:	SMARTPHONE
Model No.	:	V22
Trade Mark	:	Vortex
Rating(s)	:	Input: DC 5V, 1A (with DC 3.8V, 3000mAh Battery inside)

Test Standard(s)	**:**	**FCC PART 2, FCC Part 22(H), FCC Part 24(E)**
Test Method(s)	**:**	**ANSI C63.26-2015** **KDB 971168 D01 Power Meas License Digital Systems v03r01**

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 22, FCC Part 24 requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Receipt		Dec. 13, 2021
Date of Test :	:	Dec. 13, 2021~Jan, 14, 2022
Prepared by :	:	Ella Liang (Ella Liang)
Approved & Authorized Signer :	:	Kingkong Jin (Kingkong Jin)

1. General Information

1.1. Client Information

Applicant	:	Xwireless LLC
Address	:	11565 Old Georgetown Road, Rockville, MD, USA
Manufacturer	:	Xwireless LLC
Address	:	11565 Old Georgetown Road, Rockville, MD, USA

1.2. Description of Device (EUT)

Product Name	:	SMARTPHONE	
Model No.	:	V22	
Trade Mark	:	Vortex	
Test Power Supply	:	DC 3.8V Battery inside	
Test Sample No.	:	1-2-1(Normal Sample), 1-2-2(Engineering Sample)	
Product Description	:	Support Network	GSM, GPRS, EGPRS
		Transmit Frequency:	GSM 850: 824.2MHz~848.8 MHz PCS 1900: 1850.2MHz~1909.8 MHz
		Receive Frequency:	GSM 850: 869.20MHz~893.80MHz PCS 1900: 1930.20MHz-1989.80MHz
		Modulation Type	GMSK for GSM/GPRS 8PSK for EGPRS
		GPRS Multislot Class	12
		EGPRS Multislot Class	12
		Antenna Type	FPC Antenna
		Antenna Gain(Peak):	GSM 850: 1 dBi (Provided by customer) PCS 1900: 1 dBi (Provided by customer)
		Adapter	Model: YMK-6W050100 Input: 100-240V~50/60Hz 0.15A Max Output: DC 5V, 1000mA
Remark: 1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual. 2) This report is for GSM module.			

1.3. Auxiliary Equipment Used During Test

Description	Rating(s)
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1.4. Operation State

Test frequency list:

GSM850		PCS1900	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
128	824.20	512	1850.20
190	836.60	661	1880.00
251	848.80	810	1909.80

Test mode:

Antenna port conducted and radiated test items were performed according to KDB 971168 D01 Power Meas. License Digital Systems v03 and ANSI C63.26-2015 with maximum output power.

Radiated measurements were performed with rotating EUT in different three orthogonal test planes to find the maximum emission.

Radiated emissions were investigated as following frequency range:

30 MHz to 10th harmonic for GSM850, PCS1900.

All modes and data rates and positions were investigated.

Test modes are chosen to be reported as the worst case configuration below:

Test modes		
Band	Radiated	Conducted
GSM 850	■ GSM link ■ GPRS Class 8 link ■ EGPRS Class 8 link	■ GSM link ■ GPRS Class 8 link ■ EGPRS Class 8 link
PCS 1900	■ GSM link ■ GPRS Class 8 link ■ EGPRS Class 8 link	■ GSM link ■ GPRS Class 8 link ■ EGPRS Class 8 link

1.5. Environmental Conditions

Temperature range:	21-25℃
Humidity range:	40-75%
Pressure range:	86-106kPa

1.6. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analysis	Agilent	E4407B	US39390582	Oct. 22, 2021	1 Year
2.	Preamplifier	SKET Electronic	BK1G18G30D	KD17503	Oct. 22, 2021	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESPI3	101604	Oct. 22, 2021	1Year
4.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Oct. 22, 2021	2 Year
5.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Oct. 22, 2021	2 Year
6.	Pre-amplifier	SONOMA	310N	186860	Oct. 22, 2021	1 Year
7.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
8.	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	Oct. 22, 2021	1 Year
9.	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Oct. 22, 2021	1 Year
10.	DC Power Supply	LW	TPR-6420D	374470	Oct. 22, 2021	1 Year
11.	Constant Temperature Humidity Chamber	ZHONGJIAN	ZJ-KHWS80B	N/A	Oct. 22, 2021	1 Year
12.	Universal Radio Communication Tester	Rohde & Schwarz	CMU 200	117888	Oct. 22, 2021	1 Year
13.	Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	104209	Oct. 22, 2021	1 Year
14.	High-Pass Filter	CDKMV	ZHPF-BM1100 -4000-0730	B2015094550	Oct. 22, 2021	1 Year
15.	High-Pass Filter	CDKMV	ZHPF-M3.5 -18G-3834	1307006523	Oct. 22, 2021	1 Year
16.	4 Ch. Simultaneous Sampling 14 Bits 2 MS/s	Agilent	U2531A	TW54063507	Oct. 22, 2021	1 Year
17.	4 Ch. Simultaneous Sampling 14 Bits 2 MS/s	Agilent	U2531A	TW54063513	Oct. 22, 2021	1 Year

1.7. Measurement Uncertainty

Maximum measurement uncertainty

Parameter	Uncertainty
RF output power, conducted	±1,5 dB
Power Spectral Density, conducted	±3 dB
Unwanted Emissions, conducted	±3 dB
All emissions, radiated	±6 dB
Temperature	±1 ℃
Humidity	±5 %
DC and low frequency voltages	±3 %
Time	±5 %
Confidence interval：95%. Confidence factor:k=2	

1.8. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.: 184111

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No. 184111.

ISED-Registration No.: 8058A

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (ISED) Innovation, Science and Economic Development Canada. The acceptance letter from the ISED is maintained in our files. Registration 8058A.

Test Location

Shenzhen Anbotek Compliance Laboratory Limited.
1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.518102

2. Summary of Test

2.1. Summary of test result

FCC Rules	Description of Test	Result
Part 2.1046 Part 22.913(a) Part 24.232(c)	Conducted Output Power	Compliance
Part 24.232	Peak-Average Ratio	Compliance
§ 2.1047	Modulation Characteristics	N/A
Part 2.1049	99% Occupied Bandwidth & 26 dB Bandwidth	Compliance
Part 2.1051 Part 22.917 Part 24.238	Spurious emissions at antenna terminals	Compliance
Part 2.1051 Part 22.917 Part 24.238	Band Edge	Compliance
Part 2.1055(a)(1)(b) Part 22.355 Part 24.235	Frequency stability VS. temperature	Compliance
Part 2.1055(d)(1)(2) Part 22.355 Part 24.235	Frequency stability VS. voltage	Compliance
Part 2.1046 Part 22.913(a) Part 24.232(b)	ERP and EIRP	Compliance
Part 2.1053 Part 22.917 Part 24.238	Field strength of spurious radiation	Compliance

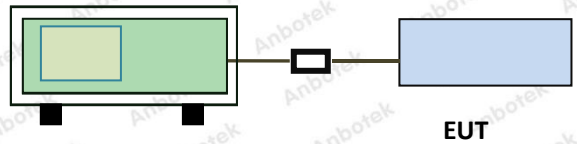
Note: Testing was performed by configuring EUT to maximum output power status, the declared output power class for different

3. Conducted Output Power Test

3.1. Test Standard and Limit

Applicable Standard:	Part 2.1046 Part 22.913(a) Part 24.232(c)
Limit:	N/A

3.2. Test Setup



3.3. Test Procedure

1. The EUT output port was connected to communication tester.
2. Set EUT at maximum power through communication tester.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure the maximum burst average power.

3.4. Test Data

Pass

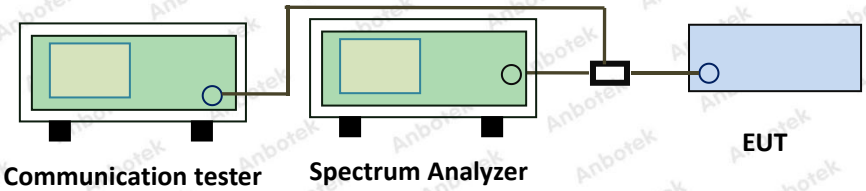
Please refer to Appendix A of the Appendix Test Data.

4. Peak-Average Ratio

4.1. Test Standard and Limit

Applicable Standard:	Part 24.232
Limit:	13dB

4.2. Test Setup



4.3. Test Procedure

According with KDB 971168 D01 Section 5.7:

1. The EUT was connected to the spectrum analyzer and communication tester via a power splitter.
2. Set EUT in maximum power output.
3. Center Frequency = Carrier frequency, RBW > Emission bandwidth of signal.
4. The signal analyzer was set to collect one million samples to generate the CCDF curve.
5. The measurement interval was set depending on the type of signal analyzed.
   i. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms.
   ii. For burst transmissions, the spectrum analyzer is set to use an internal " RF Burst" trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the "on time" of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power
6. Record the maximum PAPR level associated with a probability of 0.1%.

4.4. Test Data

Pass

Please refer to Appendix B of the Appendix Test Data.

5. Modulation Characteristic

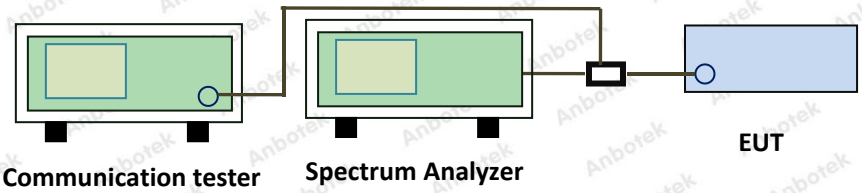
According to FCC § 2.1047(d), Part 22H, Part 24E there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

6. 99% Occupied Bandwidth & 26 dB Bandwidth

6.1. Test Standard and Limit

Applicable Standard:	Part 2.1049
Limit:	N/A

6.2. Test Setup



6.3. Test Procedure

1. The EUT was connected to the spectrum analyzer and communication tester via a power splitter.
2. Set EUT in maximum power output.
3. Spectrum analyzer setting as follow:
   Center Frequency= Carrier frequency, RBW=1% to 5% of anticipated OBW, VBW= 3 * RBW, Detector=Peak,
   Trace maximum hold.
4. Record the value of 99% Occupied bandwidth and -26dB bandwidth.

6.4. Test Data

Pass

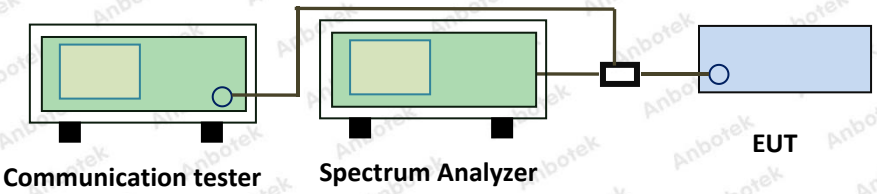
Please refer to Appendix C of the Appendix Test Data.

7. Spurious emissions at antenna terminals

7.1. Test Standard and Limit

Applicable Standard:	Part 2.1051 Part 22.917 Part 24.238
Limit:	Part 24.238 and Part 22.917 specify that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

7.2. Test Setup



7.3. Test Procedure

1. The EUT was connected to the spectrum analyzer and communication tester via a power splitter.
2. Set EUT in maximum power output.
3. Spectrum analyzer setting as follow:
   Below 1GHz, RBW=100KHz, VBW = 300KHz, Detector=Peak, Sweep time= Auto
   Above 1GHz, RBW=1MHz, VBW=3MHz, Detector=Peak, Sweep time= Auto
   Scan frequency range up to 10th harmonic.
4. Record the test plot.

7.4. Test Data

Pass

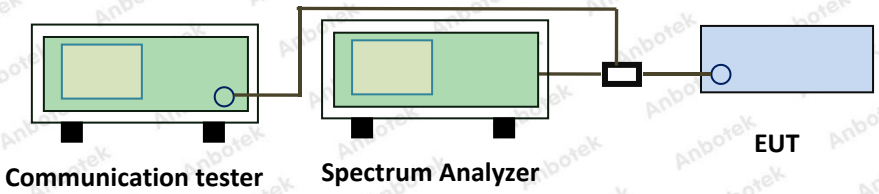
Please refer to Appendix E of the Appendix Test Data.

8. Band Edge

8.1. Test Standard and Limit

Applicable Standard:	Part 2.1051 Part 22.917 Part 24.238
Limit:	Part 24.238 and Part 22.917 specify that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

8.2. Test Setup



8.3. Test Procedure

1. The EUT was connected to the spectrum analyzer and communication tester via a power splitter.
2. Set EUT in maximum power output.
3. The band edges of low and high channels were measured.
4. Spectrum analyzer setting as follow:
   RBW=3KHz, VBW = 10KHz, Sweep time= Auto
5. Record the test plot.

8.4. Test Data

Pass

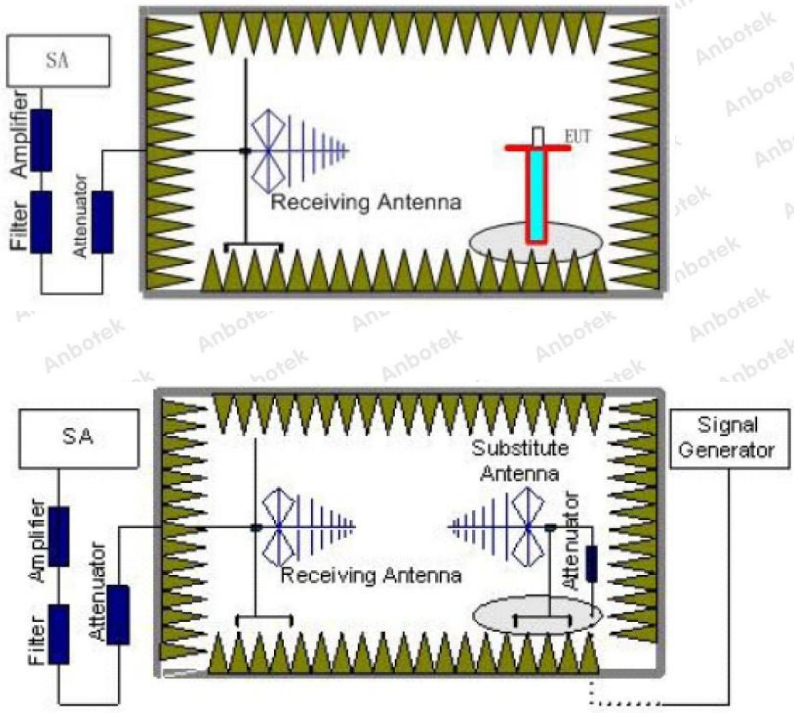
Please refer to Appendix D of the Appendix Test Data.

9. Field strength of spurious radiation

9.1. Test Standard and Limit

Applicable Standard:	Part 2.1053 Part 22.917 Part 24.238
Limit:	-13dBm

9.2. Test Setup



9.3. Test Procedure

1. Place the EUT in the center of the turntable.
   a) For radiated emissions measurements performed at frequencies less than or equal to 1 GHz, the EUT shall be placed on a RF-transparent table at a nominal height of 80 cm above the reference ground plane
   b) For radiated measurements performed at frequencies above 1 GHz, the EUT shall be placed on an RF transparent table at a nominal height of 1.5 m above the ground plane.
2. Unless the EUT uses an integral antenna, the EUT shall be terminated with a non-radiating transmitter load. In cases where the EUT uses an adjustable antenna, the antenna shall be adjusted through typical positions and lengths to maximize emissions levels.
3. The EUT shall be tested while operating on the frequency per manufacturer specification. Set the transmitter to operate in continuous transmit mode.
4. Receiver or Spectrum set as follow:

   Below 1GHz, RBW=100kHz, VBW=300kHz, Detector=Peak, Sweep time=Auto
   Above 1GHz, RBW=1MHz, VBW=3MHz, Detector=Peck, Sweep time=Auto

5. Each emission under consideration shall be evaluated:
   a) Raise and lower the measurement antenna from 1 m to 4 m, as necessary to enable detection of the maximum emission amplitude relative to measurement antenna height.
   b) Rotate the EUT through 360° to determine the maximum emission level relative to the axial position.
   c) Return the turntable to the azimuth where the highest emission amplitude level was observed.
   d) Vary the measurement antenna height again through 1 m to 4 m again to find the height associated with the maximum emission amplitude.
   e) Record the measured emission amplitude level and frequency
6. Repeat step 5 for each emission frequency with the measurement antenna oriented in both the horizontal and vertical polarizations to determine the orientation that gives the maximum emissions amplitude.
7. Set-up the substitution measurement with the reference point of the substitution antenna located as near as possible to where the center of the EUT radiating element was located during the initial EUT measurement.
8. Maintain the previous measurement instrument settings and test set-up, with the exception that the EUT is removed and replaced by the substitution antenna.
9. Connect a signal generator to the substitution antenna; locate the signal generator so as to minimize any potential influences on the measurement results. Set the signal generator to the frequency where emissions are detected, and set an output power level such that the radiated signal can be detected by the measurement instrument, with sufficient dynamic range relative to the noise floor.
10. For each emission that was detected and measured in the initial test
    a) Vary the measurement antenna height between 1 m to 4 m to maximize the received (measured) signal amplitude.
    b) Adjust the signal generator output power level until the amplitude detected by the measurement instrument equals the amplitude level of the emission previously measured directly in step 5 and step 6.
    c) Record the output power level of the signal generator when equivalence is achieved in step b).
11. Repeat step 8 through step 10 with the measurement antenna oriented in the opposite polarization.
12. Calculate the emission power in dBm referenced to a half-wave dipole using the following equation:

    Pe = Ps(dBm) − cable loss (dB) + antenna gain (dBd)

    where

    Pe = equivalent emission power in dBm

    Ps = source (signal generator) power in dBm

    NOTE—dBd refers to the measured antenna gain in decibels relative to a half-wave dipole.
13. Correct the antenna gain of the substitution antenna if necessary to reference the emission power to a half-wave dipole. When using measurement antennas with the gain specified in dBi, the equivalent dipole-referenced gain can be determined from:

    gain (dBd) = gain (dBi) − 2.15 dB.

    If necessary, the antenna gain can be calculated from calibrated antenna factor information
14. Provide the complete measurement results as a part of the test report.

9.4. Test Data

Pass

Note: Worst case at GSM850/PCS1900

GSM850							
Channel	Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
		Polarization	reading (dBm)	factor (dB)	Level (dBm)		
128	1648.40	Vertical	-41.11	5.32	-35.79	<-13.00	PASS
	2472.60	V	-48.81	9.32	-39.49		
	3296.80	V	-53.00	12.48	-40.52		
	1648.40	Horizontal	-42.38	5.32	-37.06	<-13.00	PASS
	2472.60	H	-49.95	9.26	-40.69		
	3296.80	H	-54.03	12.49	-41.54		
190	1673.20	Vertical	-40.16	5.33	-34.83	<-13.00	PASS
	2509.80	V	-47.75	9.16	-38.59		
	3346.40	V	-52.16	12.49	-39.67		
	1673.20	Horizontal	-41.23	5.34	-35.89	<-13.00	PASS
	2509.80	H	-49.00	9.26	-39.74		
	3346.40	H	-53.32	12.68	-40.64		
251	1697.60	Vertical	-38.76	5.56	-33.20	<-13.00	PASS
	2546.40	V	-46.39	9.28	-37.11		
	3395.20	V	-50.91	12.65	-38.26		
	1697.60	Horizontal	-40.99	5.67	-35.32	<-13.00	PASS
	2546.40	H	-48.56	9.36	-39.20		
	3395.20	H	-52.87	12.69	-40.18		

Remark:

1. The emission behaviour belongs to narrowband spurious emission.
2. The emission levels of not record in the report are very lower than the limit and not show in test report.

PCS1900							
Channel	Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
		Polarization	reading (dBm)	factor (dB)	Level (dBm)		
512	3700.40	Vertical	-46.81	13.45	-33.36	<-13.00	PASS
	5550.60	V	-54.55	16.61	-37.94		
	7400.80	V	-58.44	17.92	-40.52		
	3700.40	Horizontal	-48.11	13.45	-34.66	<-13.00	PASS
	5550.60	H	-55.77	16.61	-39.16		
	7400.80	H	-59.59	17.92	-41.67		
661	3760.00	Vertical	-45.77	13.49	-32.28	<-13.00	PASS
	5640.00	V	-53.62	16.69	-36.93		
	7520.00	V	-57.63	18.06	-39.57		
	3760.00	Horizontal	-47.25	13.49	-33.76	<-13.00	PASS
	5640.00	H	-55.01	16.69	-38.32		
	7520.00	H	-58.94	18.06	-40.88		
810	3819.60	Vertical	-44.13	13.12	**-31.01**	<-13.00	PASS
	5729.40	V	-52.76	17.03	-35.73		
	7639.20	V	-56.54	18.09	-38.45		
	3819.60	Horizontal	-45.82	13.12	-32.70	<-13.00	PASS
	5729.40	H	-54.36	17.03	-37.33		
	7639.20	H	-58.04	18.09	-39.95		

Remark:

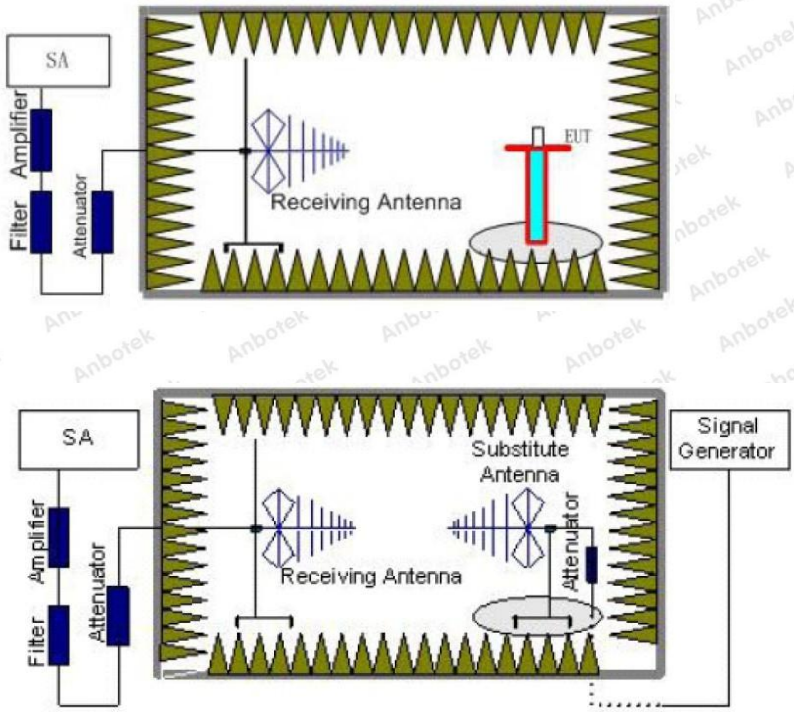
3. The emission behaviour belongs to narrowband spurious emission.
4. The emission levels of not record in the report are very lower than the limit and not show in test report.

10. ERP and EIRP

10.1. Test Standard and Limit

Applicable Standard:	Part 2.1046 Part 22.913(a) Part 24.232(b)
Limit:	GSM850: 7W (38.45dBm) ERP PCS1900: 2W (33dBm) EIRP

10.2. Test Setup



10.3. Test Procedure

1. Place the EUT in the center of the turntable.
   a) For radiated emissions measurements performed at frequencies less than or equal to 1 GHz, the EUT shall be placed on a RF-transparent table at a nominal height of 80 cm above the reference ground plane
   b) For radiated measurements performed at frequencies above 1 GHz, the EUT shall be placed on an RF transparent table at a nominal height of 1.5 m above the ground plane.
2. Unless the EUT uses an integral antenna, the EUT shall be terminated with a non-radiating transmitter load. In cases where the EUT uses an adjustable antenna, the antenna shall be adjusted through typical positions and lengths to maximize emissions levels.
3. The EUT shall be tested while operating on the frequency per manufacturer specification. Set the transmitter to operate in continuous transmit mode.
4. Receiver or Spectrum set as follow:

Below 1GHz, RBW=100kHz, VBW=300kHz, Detector=Peak, Sweep time=Auto

Above 1GHz, RBW=1MHz, VBW=3MHz, Detector=Peck, Sweep time=Auto

5. Each emission under consideration shall be evaluated:
   a) Raise and lower the measurement antenna from 1 m to 4 m, as necessary to enable detection of the maximum emission amplitude relative to measurement antenna height.
   b) Rotate the EUT through 360° to determine the maximum emission level relative to the axial position.
   c) Return the turntable to the azimuth where the highest emission amplitude level was observed.
   d) Vary the measurement antenna height again through 1 m to 4 m again to find the height associated with the maximum emission amplitude.
   e) Record the measured emission amplitude level and frequency
6. Repeat step 5 for each emission frequency with the measurement antenna oriented in both the horizontal and vertical polarizations to determine the orientation that gives the maximum emissions amplitude.
7. Set-up the substitution measurement with the reference point of the substitution antenna located as near as possible to where the center of the EUT radiating element was located during the initial EUT measurement.
8. Maintain the previous measurement instrument settings and test set-up, with the exception that the EUT is removed and replaced by the substitution antenna.
9. Connect a signal generator to the substitution antenna; locate the signal generator so as to minimize any potential influences on the measurement results. Set the signal generator to the frequency where emissions are detected, and set an output power level such that the radiated signal can be detected by the measurement instrument, with sufficient dynamic range relative to the noise floor.
10. For each emission that was detected and measured in the initial test
    a) Vary the measurement antenna height between 1 m to 4 m to maximize the received (measured) signal amplitude.
    b) Adjust the signal generator output power level until the amplitude detected by the measurement instrument equals the amplitude level of the emission previously measured directly in step 5 and step 6.
    c) Record the output power level of the signal generator when equivalence is achieved in step b).
11. Repeat step 8 through step 10 with the measurement antenna oriented in the opposite polarization.
12. Calculate the emission power in dBm referenced to a half-wave dipole using the following equation:

    Pe = Ps(dBm) − cable loss (dB) + antenna gain (dBd)

    where

    Pe = equivalent emission power in dBm

    Ps = source (signal generator) power in dBm

    NOTE—dBd refers to the measured antenna gain in decibels relative to a half-wave dipole.
13. Correct the antenna gain of the substitution antenna if necessary to reference the emission power to a half-wave dipole. When using measurement antennas with the gain specified in dBi, the equivalent dipole-referenced gain can be determined from:

    gain (dBd) = gain (dBi) − 2.15 dB.

    If necessary, the antenna gain can be calculated from calibrated antenna factor information
14. Provide the complete measurement results as a part of the test report.

10.4. Test Data

Pass

Mode	Channel	ERP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
GSM850	128	32.82	29.70	<38.45	PASS
	190	31.61	29.40		
	251	32.07	29.71		
GPRS850	128	30.94	28.50	<38.45	PASS
	190	29.31	28.61		
	251	30.05	28.32		
EGPRS850	128	28.56	26.45	<38.45	PASS
	190	28.44	26.16		
	251	28.85	26.37		

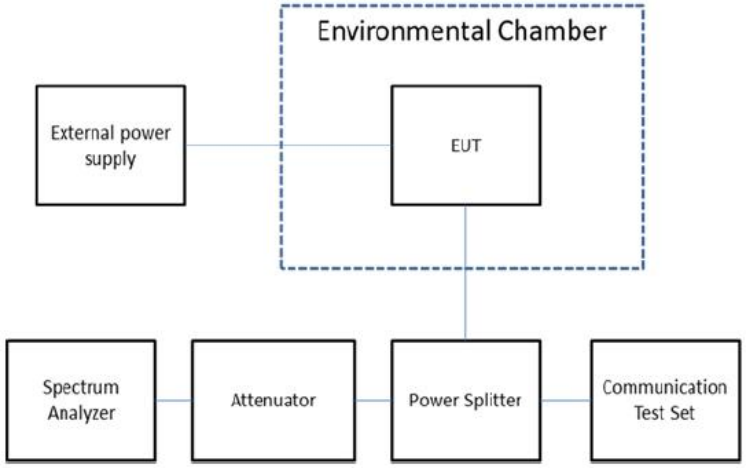
Bandwidth	Channel	EIRP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
PCS1900	512	28.39	26.90	<33.00	PASS
	661	28.47	27.28		
	810	28.13	26.95		
GPRS1900	512	26.43	26.94	<33.00	PASS
	661	26.96	25.12		
	810	27.07	26.22		
EGPRS1900	512	27.58	25.89	<33.00	PASS
	661	26.03	25.40		
	810	26.92	25.52		

11. Frequency stability VS Temperature measurement

11.1. Test Standard and Limit

Applicable Standard:	Part 2.1055(a)(1)(b) Part 22.355 Part 24.235
Limit:	2.5ppm

11.2. Test Setup



11.3. Test Procedure

1. The equipment under test was connected to an external DC power supply and input rated voltage.
2. The EUT output port was connected to communication tester.
3. The EUT was placed inside the temperature chamber.
4. Turn EUT off and set the chamber temperature to –30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency.
5. Repeat step 4 measure with 10°C increased per stage until the highest temperature of +50°C reached.

11.4. Test Data

Pass

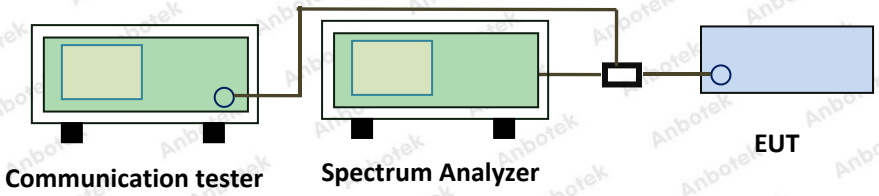
Please refer to Appendix G of the Appendix Test Data.

12. Frequency stability VS Voltage measurement

12.1. Test Standard and Limit

Applicable Standard:	Part 2.1055(d)(1)(2) Part 22.355 Part 24.235
Limit:	2.5ppm

12.2. Test Setup



12.3. Test Procedure

1. The equipment under test was connected to an external DC power supply and input rated voltage.
2. The EUT output port was connected to communication tester.
3. The EUT was placed inside the temperature chamber at 25°C.
4. The power supply voltage to the EUT was varied ±15% of the nominal value measured at the input to the EUT.
5. Record the maximum frequency change.

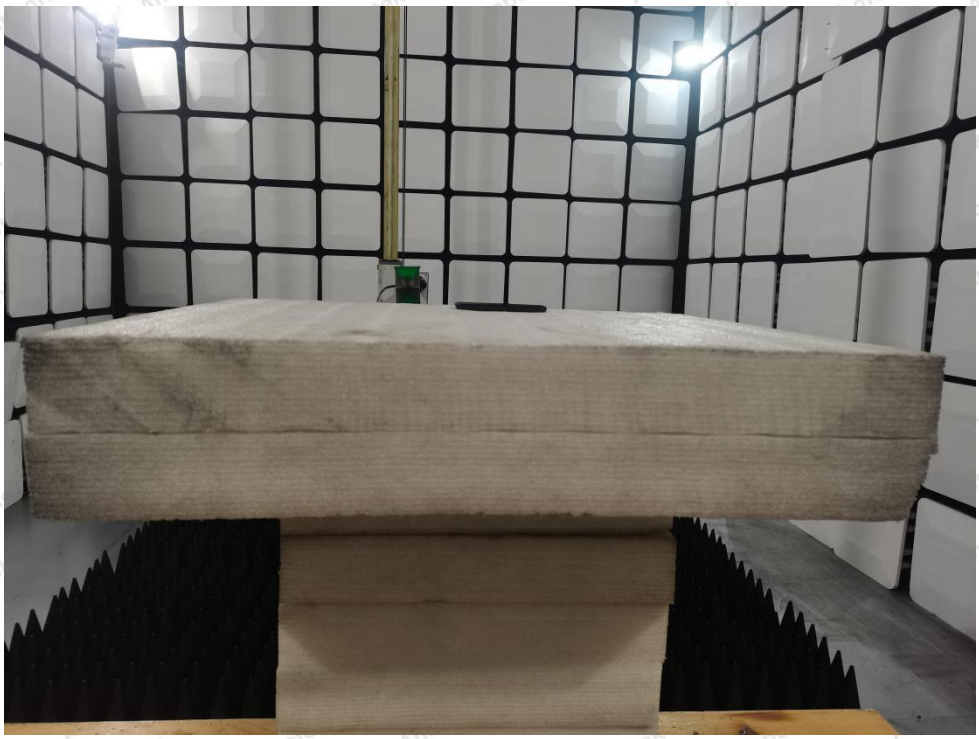
12.4. Test Data

Pass

Please refer to Appendix F of the Appendix Test Data.

APPENDIX I -- TEST SETUP PHOTOGRAPH

Photo of Radiation Emission Test



APPENDIX II -- EXTERNAL PHOTOGRAPH

Reference to the test report 18220WC10271801.

APPENDIX III -- INTERNAL PHOTOGRAPH

Reference to the test report 18220WC10271801.

APPENDIX IV – Appendix Test Data